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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/720,598	05/07/2001	Gerald Bocquenot	022701-915	2355
21839	7590	04/20/2004	EXAMINER	
BURNS DOANE SWECKER & MATHIS L L P			SHIAO, REI TSANG	
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ALEXANDRIA, VA 22313-1404			ART UNIT	PAPER NUMBER
			1626	

DATE MAILED: 04/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/720,598

Applicant(s)

BOCQUENET ET AL.

Examiner

Robert Shiao

Art Unit

1626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on responses filed on 3/24, 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22-24, 28, 29 and 31-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22-24, 28, 29 and 31-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This application claims benefit of the foreign application:
France 98/08258 with a filing date 06/25, 1998.
2. Amendment of claim 22, cancellation of claims 1-21, 25-27, 30, and addition of claims 34-36 in Paper No. 0304, dated March 24, 2004, is acknowledged. Claims 22-24, 28-29, and 31-36 are pending in the application.

Responses to Amendment

3. The rejection of claims 22-24 and 31-33 under 35 U.S.C. 103(a) has been overcome in Paper No. 0304, dated March 24, 2004. Since claims 28-29 have been cancelled, therefore, the rejection of claims 28-29 under 35 U.S.C. 103(a) is obviated.
4. Applicant's arguments with respect to claims 1 and 15 have been considered but are moot in view of the new grounds of rejection.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 34-36 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a process of making lactam having 6 carbon atoms, does not reasonably provide enablement for a process of making lactam having

Art Unit: 1626

other than 6 carbon atoms, see page 7 Example 1. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, without limitation of lactam or aminonitrile in the invention commensurate in scope with these claims, see page 4, lines 1-15.

6. Claim 34-36 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

For rejections under 35 U.S.C. 112, first paragraph, the following factors must be considered (In re Wands, 8 USPQ2d 1400, 1988):

- 1) Nature of invention.
- 2) State of prior art.
- 3) Level of ordinary skill in the art.
- 4) Level of predictability in the art.
- 5) Amount of direction and guidance provided by the inventor.
- 6) Existence of working examples.
- 7) Breadth of claims.
- 8) Quantity of experimentation needed to make or use the invention based on the content of the disclosure.

See below:

1) Nature of the invention.

The claim is drawn to a process of making lactam without limitation of products lactam or starting materials aminonitrile.

2) State of the prior art.

The reference Cotting et al. US 6,262,259 does not indicate which lactam of instant lactam may be useful in the claimed invention. Cotting et al. '259 is pertaining to process of making lactam.

3) Level of ordinary skill in the art.

The level of ordinary skill in the art is high. The process of making lactam without limitation of products lactam or starting materials aminonitrile encompasses a vast number of processes. Applicant's specification does not enable the public to prepare such a numerous amount of processes by the instant examples disclosed in the specification.

4) Level of predictability in the art.

The art is pertaining to related a process of making lactam without limitation of products lactam or starting materials aminonitrile, i.e., see claim 34, line 1. Different types of the genus of processes require various experimental procedures and without guidance that is applicable to all possible "processes of making lactam without limitation of products lactam or starting materials aminonitrile", there would be little predictability in the scope of claimed compounds.

Art Unit: 1626

5) Amount of direction and guidance provided by the inventor.

The process of making lactam without limitation of products lactam or starting materials aminonitrile encompasses a vast number of processes. Applicant's limited guidance does not enable the public to prepare such a numerous amount of "a process of making lactam without limitation of products lactam or starting materials aminonitrile" in the specification. There is no enablement for "a process of making lactam without limitation of products lactam or starting materials aminonitrile" representing general substituents including lactam having more than 13 carbon atoms, etc., many of which are neither enabled nor supported in the specification.

6) Existence of working examples.

The process of making lactam without limitation of products lactam or starting materials aminonitrile encompasses a vast number of processes. Applicant's limited working examples do not enable the public to prepare such a numerous amount of "processes of making lactam without limitation of products lactam or starting materials aminonitrile" in the specification. Applicants claim "a process of making lactam without limitation of products lactam or starting materials aminonitrile", however, the specification provides limited examples of the instant compounds.

7) Breadth of claims.

The claims are extremely broad due to the vast number of possible "a process of making lactam without limitation of products lactam or starting materials aminonitrile".

8) Quantity of experimentation needed to make or use the invention based on the content of the disclosure.

The specification did not enable any person skilled in the art to which it pertains to make or use the invention commensurate in scope with this claim. In particular, the specification failed to enable the skilled artisan to practice the invention without undue experimentation. The skilled artisan would have a numerous amount of modifications to perform in order to obtain "a process of making lactam without limitation of products lactam or starting materials aminonitrile" as claimed. Based on the unpredictable nature of the invention and state of the prior art and the extreme breadth of the claims, one skilled in the art could not perform the claimed process without undue experimentation, see *In re Armbruster* 185 USPQ 152 CCPA 1975. A suggestion to obviate the rejection would be to incorporate the scope of products lactam or starting materials aminonitrile into the claims, see page 4, lines 1-15.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 36 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 36, line 8, recites the limitation "a temperature at which vaporization of the mixture is complete", is ambiguous and indefinite. It is unclear what the temperature range of the heat exchanger is, in which this reacting conditions are running.

Clarification is required, see page 3, lines 12-22.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 22-24,28-29, and 31-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cotting et al. US 6,262,259.

Applicants claim a process of making lactam using water and aminonitrile in vapor as starting materials in the presence of catalyst, and this process is found in the pages 1-8 of the instant specification.

Determination of the scope and content of the prior art (MPEP §2141.01)

Cotting et al. disclose a process of making lactam by vapor phase reaction of aminonitrile and water in the presence of catalyst.

Determination of the difference between the prior art and the claims (MPEP §2141.02)

The difference between the instant claims and Cotting et al. is that Cotting et al. silence vaporizing the aminonitrile by feeding the aminonitrile in liquid phase to the evaporator.

Finding of prima facie obviousness-rational and motivation (MPEP §2142-2143)

One having ordinary skill in the art would find the instant claims *prima facie* obvious **because** one would be motivated to employ the processes of Cotting et al. to obtain the instant processes, wherein a process of making lactam using water and aminonitrile in vapor as starting materials in the presence of catalyst.

Moreover, optimization of variables, such as by feeding the aminonitrile in liquid phase, pressure, and temperature, etc., in a known Cotting et al. process is *prima facie* obvious. Therefore, the claimed process would have been suggested to one skilled in the art.

Double Patenting

9. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

10. Claims 22-24,28-29, and 31-36 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-10 of Cotting et al. US 6,262,259. Although the conflicting claims are not identical, they are not patentably distinct from each other, and the reasons are given, *infra*.

Applicants claim a process of making lactam using water and aminonitrile in vapor as starting materials in the presence of catalyst, and this process is found in the pages 1-8 of the instant specification.

Cotting et al. disclose a process of making lactam by vapor phase reaction of aminonitrile and water in the presence of catalyst.

The difference between the instant claims and Cotting et al. is that Cotting et al. silence vaporizing the aminonitrile by feeding the aminonitrile in liquid phase to the evaporator.

One having ordinary skill in the art would find the instant claims prima facie obvious **because** one would be motivated to employ the processes of Cotting et al. to obtain the instant processes, wherein a process of making lactam using water and aminonitrile in vapor as starting materials in the presence of catalyst.

Moreover, optimization of variables, such as by feeding the aminonitrile in liquid phase, pressure, and temperature, etc., in a known Cotting et al. process is prima facie

Art Unit: 1626

obvious. Therefore, the claimed process would have been suggested to one skilled in the art.

Objection

11. Claims 23-24 are objected. It seems to be typographic errors of "120 to 600 C" and "20 to 300 C" in claim 23 and 24 respectively. Replacement of a corrected format (i.e., 120⁰ C to 600⁰ C) would obviate the objection.


Telephone Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Shiao whose telephone number is (571) 272-0707. The examiner can normally be reached on 8:30 AM - 5:00 PM.

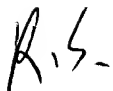
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph K. McKane can be reached on (571) 272-0699. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Art Unit: 1626


for

Joseph K. McKane
Supervisory Patent Examiner
Art Unit 1626



Robert Shiao, Ph.D.
Patent Examiner
Art Unit 1626

April 16, 2004